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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,902	09/11/2003	Sasson R. Somekh	006869	4187

7590

05/12/2005

Patent Counsel  
Applied Materials, Inc.  
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EXAMINER

VERSTEEG, STEVEN H

ART UNIT PAPER NUMBER

1753

DATE MAILED: 05/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/659,902

Applicant(s)

SOMEKH ET AL.

Examiner

Steven H. VerSteeg

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 9-14 and 20-26 is/are allowed.
- 6) ☒ Claim(s) 15-19 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/29/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **504** [0051], **340** [0061] and **41** [0072]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: in Figure 3, items **152, 296, 302, and 304**; in Figure 4, item **160**; in Figure 6, items **160, and 151**; and in Figure 7, items **152, 264, 294, 250, 262, 260, and 157a**. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR

Art Unit: 1753

1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. The disclosure is objected to because of the following informalities: please insert either the patent number or status of the application listed at [0012] and [0023].

Appropriate correction is required.

***Claim Objections***

5. Claim 8 is objected to because of the following informalities: the claim ends with a semicolon instead of a period. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 15-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 15 recites the limitation "said monitor" in line 16. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 1753

9. Claim 16 depends from claim 15 and contains all of the limitations of claim 15.

Therefore, claim 16 is rejected for the same reasons as claim 15.

10. Claim 17 recites the limitation "said monitor" in line 18. There is insufficient antecedent basis for this limitation in the claim.

11. Claims 18 and 19 depend from claim 17 and contain all of the limitations of claim 17.

Therefore, claims 18 and 19 are rejected for the same reasons as claim 17.

***Allowable Subject Matter***

12. Claims 1-7, 9-14, and 20-26 are allowed.

13. Claim 8 would be allowable if written to overcome the claim objection presented above.

14. Claims 15 and 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

15. Claims 16, 18, and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious over the prior art of record to have a method of depositing material onto a substrate having a substrate layer of material as claimed by Applicant in claims 1 or 9; or a method of depositing material onto a substrate having a conductor layer and an insulator overlying the conductor layer as claimed by Applicant in claim 11; or a process kit for a semiconductor sputter chamber having a window in a pressure wall, a detector disposed outside the window, a target and a workpiece support within the chamber and a plasma generation area between the workpiece support and the target as claimed by Applicant in claims 12 and 24; or a

Art Unit: 1753

reactor as claimed by Applicant in claims 15 and 17; or a system as claimed by Applicant in claims 20 and 26; or a reactor system as claimed by Applicant in claim 25.

17. US 5,160,576 to Robbins, US 3,664,942 to Havas et al. (Havas), US 6,813,534 B2 to Sui et al. (Sui), and *Optical emission spectroscopy of high density metal plasma formed during magnetron sputtering* by Radzimski et al. (Radzimski) are pertinent art.

18. Robbins discloses optically detecting the change in emission peak, but the folded radiation path or reflection labyrinth is outside the chamber and the compositions of materials that are resputtered are not detected as a function of the wavelengths monitored.

19. Radzimski merely discloses that monitoring can occur in magnetron sputtering. There is no indication of any reflection bending, folding, or labyrinth path or measuring composition of material resputtered from a substrate as a function of the wavelengths.

20. Havas discloses end point detection based upon temperature monitoring, but there is no indication that the infrared radiation is bent or reflected along a labyrinth path. Likewise, Sui does not bend or reflect any radiation along a labyrinth path.

21. Modifying Sui, Radzimski, Havas, or Robbins to include the limitations or folded radiation in the chamber or measuring the composition as a function of wavelengths monitored from resputtered material would require hindsight.

### ***General Information***

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (571) 272-1700.

Art Unit: 1753

For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Denis Boyd at (571) 272-0992.

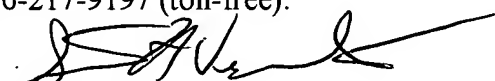
For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (571) 272-1300.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. VerSteeg whose telephone number is (571) 272-1348. The examiner can normally be reached on Mon - Thurs (6:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Steven H VerSteeg  
Primary Examiner  
Art Unit 1753

shv  
May 10, 2005